

LOUISIANA ALIGNMENT FOR NIH SUPPLEMENT HUMAN GENETIC VARIATION

<b>HUMAN GENETIC VARIATION</b>		
<b>Louisiana Grade-Level Expectations: Biology</b>		
<b>Activity</b>	<b>GLE</b>	<b>Descriptor</b>
3	SI-H-A1	Write a testable question or hypothesis when given a topic
1, 2, 3	SI-H-A2	Describe how investigations can be observation, description, literature survey, classification, or experimentation
4	SI-H-A2	Conduct an investigation that includes multiple trials and record, organize, and display data appropriately
1, 2, 3, 4	SI-H-A3	Utilize mathematics, organizational tools, and graphing skills to solve problems
2	SI-H-A3	Use technology when appropriate to enhance laboratory investigations and presentations of findings
2, 3, 4	SI-H-A4	Choose appropriate models to explain scientific knowledge or experimental results (e.g., objects, mathematical relationships, plans, schemes, examples, role-playing, computer simulations)
2, 3	SI-H-A5	Give an example of how new scientific data can cause an existing scientific explanation to be supported, revised, or rejected
1, 2, 3, 4	SI-H-A6 SI-H-A2	Write and defend a conclusion based on logical analysis of experimental data
2, 3	SI-H-B1	Evaluate selected theories based on supporting scientific evidence
2, 3	SI-H-B2	Cite evidence that scientific investigations are conducted for many different reasons
2, 3	SI-H-B2	Identify scientific evidence that has caused modifications in previously accepted theories
2, 3	SI-H-B3	Cite examples of scientific advances and emerging technologies and how they affect society (e.g., MRI, DNA in forensics)
2, 3, 4	SI-H-B4	Analyze the conclusion from an investigation by using data to determine its validity
2, 3	LS-H-B1	Identify the basic structure and function of nucleic acids (e.g., DNA, RNA)
2, 3	LS-H-B4 LS-H-B1	Describe the processes used in modern biotechnology related to genetic engineering
2, 3, 5	LS-H-B4 LS-H-B1	Identify possible positive and negative effects of advances in biotechnology
2, 3	LS-H-C3	Explain how factors affect gene frequency in a population over time
4	LS-H-G2 LS-H-G4	Discuss mechanisms of disease transmission and processes of infection
2, 5	LS-H-G4	Describe causes, symptoms, treatments, and preventions of major communicable and noncommunicable diseases

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**Louisiana Grade-Level Expectations: Mathematics – Grades 9 & 10**

<b>Grade 9</b>		
<b>Activity</b>	<b>GLE</b>	<b>Descriptor</b>
2	N-2-H	Evaluate and write numerical expressions involving integer exponents
2	N-2-H	Apply scientific notation to perform computations, solve problems, and write representations of numbers
1, 2, 3, 4	N-5-H	Demonstrate computational fluency with all rational numbers (e.g., estimation, mental math, technology, paper/pencil)
2	A-1-H D-2-H P-5-H	Model real-life situations using linear expressions, equations, and inequalities
3	A-1-H	Identify independent and dependent variables in real-life relationships
1	M-2-H M-3-H M-1-H	Determine appropriate units and scales to use when solving measurement problems
<b>Grade 10</b>		
1, 3	D-7-H	Interpret and summarize a set of experimental data presented in a table, bar graph, line graph, scatter plot, matrix, or circle graph
1, 3	P-2-H P-3-H A-3-H	Translate among tabular, graphical, and symbolic representations of patterns in real-life situations, with and without technology

**Louisiana Grade-Level Expectations: English Language Arts – Grades 9 & 10**

<b>Activity</b>	<b>GLE</b>	<b>Descriptor</b>
All activities	ELA-1-H1	Extend basic and technical vocabulary using a variety of strategies, including: use of context clues, use of knowledge of Greek and Latin roots and affixes, use of denotative and connotative meanings, and tracing etymology
All activities	ELA-1-H3	Draw conclusions and make inferences in oral and written responses about ideas and information in texts, including: nonfiction works, film/visual texts, consumer/instructional materials, and public documents
All activities	ELA-1-H4	Explain ways in which ideas and information in a variety of texts (e.g., scientific reports, technical guidelines, business memos, literary texts) connect to real-life situations and other texts (9) Analyze ways in which ideas and information in texts, such as almanacs, microfiche, news sources, technical documents, Internet sources, and literary texts, connect to real-life situations and other texts or represent a view or comment on life (10)
All activities	ELA-7-H1	Demonstrate understanding of information in grade-appropriate texts using a variety of strategies, including: summarizing and paraphrasing information and story elements, comparing and contrasting information in texts, including televised news, news magazines, documentaries, and online information, comparing and contrasting complex literary elements,

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		devices, and ideas within and across texts, examining the sequence of information and procedures in order to critique the logic or development of ideas in texts, making inferences and drawing conclusions, and making predictions and generalizations
<b>All activities</b>	<b>ELA-7-H2</b>	Solve problems using reasoning skills, including: using supporting evidence to verify solutions, analyzing the relationships between prior knowledge and life experiences and information in texts, and using technical information in specialized software programs, manuals, interviews, surveys, and access guides to Web sites
<b>All activities</b>	<b>ELA-7-H4</b>	Analyze information within and across grade-appropriate texts using various reasoning skills, including: identifying cause-effect relationships, raising questions, reasoning inductively and deductively, and generating a theory or hypothesis distinguishing facts from opinions and probability
<b>All activities</b>	<b>ELA-2-H1</b>	Develop organized, coherent paragraphs that include the following: topic sentences, logical sequence, transitional words and phrases, appropriate closing sentences, and parallel construction where appropriate
<b>All activities</b>	<b>ELA-2-H1</b>	Develop multiparagraph compositions organized with the following: a clearly stated central idea or thesis statement, a clear, overall structure that includes an introduction, a body, and an appropriate conclusion, and supporting paragraphs appropriate to the topic organized in a logical sequence (e.g., spatial order, order of importance, ascending/descending order, chronological order, parallel construction)
<b>All activities</b>	<b>ELA-2-H4</b>	Develop paragraphs and complex, multiparagraph compositions using all modes of writing (description, narration, exposition, and persuasion) emphasizing exposition and persuasion
<b>All activities</b>	<b>ELA-3-H3</b>	Use correct spelling conventions when writing and editing
<b>All activities</b>	<b>ELA-4-H1</b>	Use standard English grammar, diction, and syntax when responding to questions, participating in informal group discussions, and making presentations
<b>All activities</b>	<b>ELA-4-H1</b>	Select language appropriate to specific purposes and audiences when speaking, including: delivering informational/book reports in class, conducting interviews/surveys of classmates or the general public, and participating in class discussions
<b>All activities</b>	<b>ELA-4-H2</b>	Listen to oral instructions and presentations, speeches, discussions, and carry out procedures, including: taking accurate notes, writing summaries or responses, and forming groups
<b>All activities</b>	<b>ELA-4-H2</b>	Organize and use precise language to deliver oral directions and instructions about general, technical, or scientific topics
<b>All activities</b>	<b>ELA-4-H4</b>	Use active listening strategies, including: monitoring messages for clarity, selecting and organizing essential information, noting cues such as changes in pace, and generating and asking questions concerning a speaker's content, delivery, and attitude toward the subject
<b>2, 3, 4</b>	<b>ELA-4-H4</b>	Deliver clear, coherent, and concise oral presentations about information and ideas in texts
<b>All activities</b>	<b>ELA-5-H2</b>	Locate, analyze, and synthesize information from a variety of grade-appropriate resources, including: multiple printed texts (e.g., encyclopedias, atlases, library catalogs, specialized dictionaries, almanacs, technical encyclopedias, and periodicals), electronic sources (e.g., Web sites, databases), and other media sources (e.g., community and government data, television and radio resources, and other audio and visual materials)
<b>1, 2, 3, 4</b>	<b>ELA-5-H6</b>	Analyze information found in a variety of complex graphic organizers, including detailed maps, comparative charts, extended tables, graphs, diagrams, cutaways, overlays, and sidebars to determine usefulness for research

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<b>Louisiana Health Education Content Standards: Grades 9 – 12</b>		
<b>Activity</b>	<b>Benchmark</b>	<b>Descriptor</b>
4, 5	1-H-1	Analyze the impact of behavior on health maintenance and disease prevention
2, 3, 4, 5	1-H-2	Identify the causes, symptoms, treatment and prevention of various diseases and disorders (e.g., cardiovascular diseases, STDs, eating disorders)
4, 5	1-H-3	Describe interrelationship(s) of mental, emotional, social, and physical health throughout the life span
4, 5	1-H-4	Explain the impact of personal health behaviors on the functioning of body systems
4, 5	1-H-5	Describe the influence of family, peers, and community on the health of individuals
4	1-H-6	Evaluate environmental influences on the health of individuals in their home, community, and world
2, 3, 4, 5	2-H-1	Evaluate the validity of health information, products, and services using a variety of resources
4, 5	3-H-1	Describe the role of individual responsibility for enhancing health by analyzing the short-term and long-term consequences of behaviors throughout the life span (safe, high-risk, and harmful behaviors)
4, 5	3-H-2	Demonstrate the ability to use critical thinking when making decisions related to health needs and risks of young adults
4, 5	4-H-3	Explain how information from peers, family & community influence health
All activities	5-H-1	Demonstrate effective communication skills and identify the impact of communication on relationships with family, peers, and others
4, 5	6-H-1	Predict immediate and long-term impact of health decisions on the individual, family and community
2, 4, 5	6-H-2	Effectively communicate concerns and information about immediate and/or long-term impact of health decisions in order to influence others
2, 4, 5	6-H-4	Demonstrate techniques that influence and support others in making positive health choices (positive peer pressure)
2, 4, 5	6-H-5	Demonstrate the ability to work cooperatively when advocating for healthy communities and environments